

# IN PERSON & VIRTUAL BOARD MEETING

\*The Committee meeting will be held prior to the Board of Investments meeting.



TO VIEW VIA WEB



TO PROVIDE PUBLIC COMMENT

Members of the public may address the Committee orally and in writing. To provide Public Comment, you should visit the above link and complete the request form by selecting whether you will provide oral or written comment from the options located under Options next to the Committee meeting.

**Attention:** If you have any questions, you may email [PublicComment@lacera.com](mailto:PublicComment@lacera.com). If you would like to make a public comment during the committee meeting, review the [Public Comment instructions](#).

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION  
300 N. LAKE AVENUE, SUITE 650, PASADENA, CA

## AGENDA

A REGULAR MEETING OF THE REAL ASSETS COMMITTEE

AND THE BOARD OF INVESTMENTS\*

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

8:00 A.M., WEDNESDAY, JUNE 12, 2024

*This meeting will be conducted by the Real Assets Committee and the Board of Investments both in person and by teleconference under California Government Code Section 54953 (f).*

Any person may view the meeting in person at LACERA's offices or online at <https://LACERA.com/leadership/board-meetings>

*The Committee may take action on any item on the agenda, and agenda items may be taken out of order.*

### COMMITTEE TRUSTEES:

Patrick L. Jones, Chair  
Nicole Mi, Vice Chair  
Debbie Martin, Trustee  
Trevor G. Fay, Trustee  
Elizabeth Ginsberg, Alternate Trustee

- I. CALL TO ORDER
- II. PROCEDURE FOR TELECONFERENCE MEETING ATTENDANCE UNDER AB 2449, California Government Code Section 54953(f)
  - A. Just Cause
  - B. Action on Emergency Circumstance Requests
  - C. Statement of Persons Present at AB 2449 Teleconference Locations

June 12, 2024

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### III. APPROVAL OF MINUTES

- A. Approval of the Minutes of the Real Assets Committee Meeting of December 13, 2023

### IV. PUBLIC COMMENT

Members of the public may address the Committee orally and in writing. To provide Public Comment, you should visit <https://LACERA.com/leadership/board-meetings> and complete the request form by selecting whether you will provide oral or written comment from the options located under Options next to the Committee meeting. If you select oral comment, we will contact you via email with information and instruction as to how to access the meeting as a speaker. You will have up to 3 minutes to address the Committee. Oral comment request will be accepted up to the close of the Public Comment item on the agenda.

If you select written comment, please input your written public comment or documentation on the above link as soon as possible and up to the close of the meeting. Written comment will be made part of the official record of the meeting. If you would like to remain anonymous at the meeting without stating your name, please leave the name field blank in the request form. If you have any questions, you may email [PublicComment@lacera.com](mailto:PublicComment@lacera.com).)

### V. REPORT

#### A. **Real Assets Performance Review Presentation**

James Rice, Principal Investment Officer  
Terra Elijah, Senior Investment Analyst  
(Presentation) (Memo dated May 29, 2024)

### VI. ITEMS FOR STAFF REVIEW

(This item summarizes requests and suggestions by individual trustees during the meeting for consideration by staff. These requests and suggestions do not constitute approval or formal action by the Board, which can only be made separately by motion on an agenda item at a future meeting.)

### VII. ITEMS FOR FUTURE AGENDAS

(This item provides an opportunity for trustees to identify items to be included on a future agenda as permitted under the Board's Regulations.)

### VIII. GOOD OF THE ORDER

(For information purposes only)

### IX. ADJOURNMENT

***\*The Board of Investments has adopted a policy permitting any member of the Board to attend a standing committee meeting open to the public. In the event five or more members of the Board of Investments (including members appointed to the Committee) are in attendance, the meeting shall constitute a joint meeting of the Committee and the Board of Investments. Members of the Board of Investments who are not members of the Committee may attend and participate in a meeting of a Committee but may not vote, make a motion, or second on any matter discussed at the meeting. The only action the Committee may take at the meeting is approval of a recommendation to take further action at a subsequent meeting of the Board.***

***Documents subject to public disclosure that relate to an agenda item for an open session of the Board of Investments that are distributed to members of the Board of Investments less than 72 hours prior to the meeting will be available for public inspection at the time they are distributed to a majority of the Board of Investments Members at LACERA's offices at 300 N. Lake Avenue, Suite 820, Pasadena, CA 91101, during normal business hours of 9:00 a.m. to 5:00 p.m. Monday through Friday.***

***Requests for reasonable modification or accommodation of the telephone public access and Public Comments procedures stated in this agenda from individuals with disabilities, consistent with the Americans with Disabilities Act of 1990, may call the Board Offices at (626) 564-6000, Ext. 4401/4402 from 8:30 a.m. to 5:00 p.m. Monday through Friday or email [PublicComment@lacera.com](mailto:PublicComment@lacera.com), but no later than 48 hours prior to the time the meeting is to commence.***

MINUTES OF THE REGULAR MEETING OF THE REAL ASSETS COMMITTEE  
AND THE BOARD OF INVESTMENTS

LOS ANGELES COUNTY EMPLOYEES RETIREMENT ASSOCIATION

300 N. LAKE AVENUE, SUITE 810, PASADENA, CALIFORNIA 91101

8:00 A.M., WEDNESDAY, DECEMBER 13, 2023

*This meeting was conducted by the Real Assets Committee and Board of Investments both in person and by teleconference under California Government Code Section 54953 (f).*

PRESENT: Patrick Jones, Chair

Joseph Kelly, Vice Chair (Joined the meeting at 8:41 a.m.)

Keith Knox

Herman Santos, Alternate

ABSENT: Jason Green

MEMBERS AT LARGE:

Gina Sanchez

David Green

STAFF ADVISORS AND PARTICIPANTS

Jonathan Grabel, Chief Investment Officer

Santos Kreimann, Chief Executive Officer

Steven P. Rice, Chief Counsel

James Rice, Principal Investment Officer

Pushpam Jain, Investment Officer

December 13, 2023

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## STAFF ADVISORS AND PARTICIPANTS (Continued)

Daniel Joye, Investment Officer

Terra Elijah, Senior Investment Analyst

Albourne

Mark White, Head of Real Assets

Jennifer Yeung, Senior Portfolio Analyst

Meketa Investment Group (General Investment Consultants)

Timothy Filla, Managing Principal

### I. CALL TO ORDER

This meeting was called to order by Chair P. Jones at 8:00 a.m. in the Board Room at Gateway Plaza.

### II. PROCEDURE FOR TELECONFERENCE MEETING ATTENDANCE UNDER AB 2449, California Government Code Section 54953(f)

A. Just Cause

B. Action on Emergency Circumstance Requests

C. Statement of Persons Present at AB 2449 Teleconference Locations

There was nothing to report. No trustees participated under Section 54953(f).

### III. APPROVAL OF MINUTES

A. Approval of the Minutes of the Real Assets Committee Meeting of June 14, 2023

A motion was made by Trustee Santos, seconded by Trustee Knox, to approve the minutes of the regular meeting of June 14, 2023. The motion passed unanimously by the following roll call vote:

Yes: P. Jones, Santos, Knox

No: None

Absent: J. Green, Kelly

IV. PUBLIC COMMENT

There were no requests from the public to speak.

V. NON-CONSENT ITEM (Mr. Kelly joined the meeting at 8:41 a.m.)

A. **Advance the Real Assets Structure Review**

Recommendation as submitted by the Real Assets Team: That the Committee advance the Real Estate Structure Review to the full board for adoption. (Presentation) (Memo dated November 30, 2023)

A motion was made by Trustee Santos, seconded by Trustee Kelly, to advance to the full board with the proposed modifications to the Board of Investments for approval. The motion passed by the following roll call vote:

Yes: Santos, Jones, Kelly, Knox

No: None

Absent: J. Green

VI. ITEMS FOR STAFF REVIEW

There was nothing to report.

VII. ITEMS FOR FUTURE AGENDAS

There was nothing to report.

VIII. GOOD OF THE ORDER  
(For information purposes only)


There was nothing to report.

IX. ADJOURNMENT

There being no further business to come before the Committee, the meeting was adjourned at 8:51 a.m.

May 29, 2024

TO: Trustees – Real Assets Committee

FROM: James Rice   
Principal Investment Officer

Terra Elijah   
Senior Investment Analyst

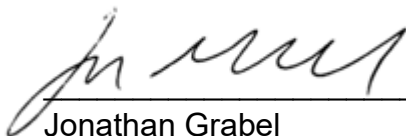
FOR: June 12, 2024 Real Assets Committee Meeting

SUBJECT: **Real Assets Performance Review**

This Performance Review (**Attachment**) illustrates the role, objectives, implementation framework, and performance, of the Real Assets portfolio. It reviews structure, performance, and portfolio objectives across portfolio components: Core Real Estate, Non-Core Real Estate, Infrastructure, Natural Resources and commodities, and Treasury Inflation Protected Securities (“TIPS”). The presentation consists of an introductory overview followed by sections dedicated to each of the five portfolio components.

Attachment

Noted and Reviewed:



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Jonathan Grabel  
Chief Investment Officer



## **Real Assets & Inflation Hedges Performance Review**

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Real Assets Committee Meeting  
June 12, 2024

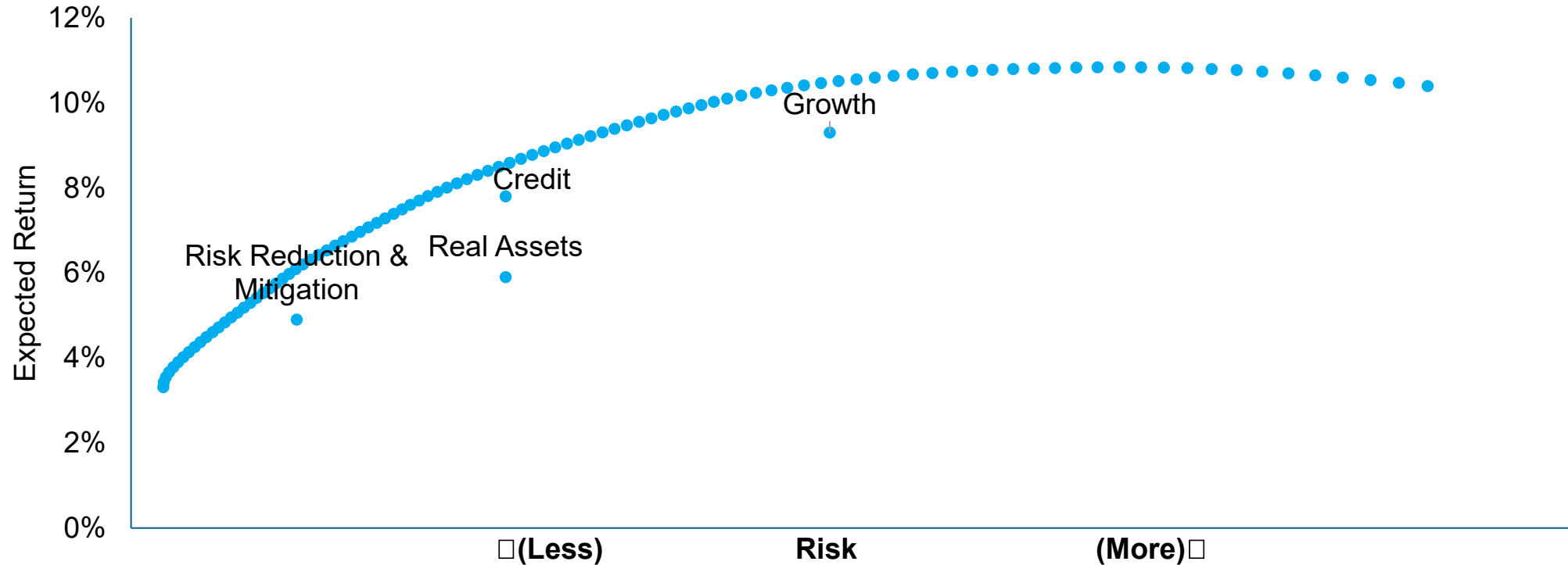
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# Real Assets: Portfolio Role



- Diversify exposure to growth assets to mitigate portfolio downside risk
- Provide consistent yield for the broader portfolio
- Hedge the risk of inflation with investments in physical or inflation-linked assets

Source: Meketa, Data from the asset allocation study.



## Real Estate

- Capital preservation and stable yields from rents
- Hard assets provide inflation protection
- Diversified sources of returns less correlated with growth assets
- Non-core also provides Growth returns

## Infrastructure

- Core: generate yield with highly contracted revenues to limit downside across market environments
- Non-core: growth opportunities across energy/utilities, transportation, communications and social infrastructure

## Natural Resources & Commodities

- Diversification, income generation, and inflation hedging
- Farmland and agriculture less correlated to broader markets, and income generators
- Energy Transition and mining are diversifiers with some inflation hedging

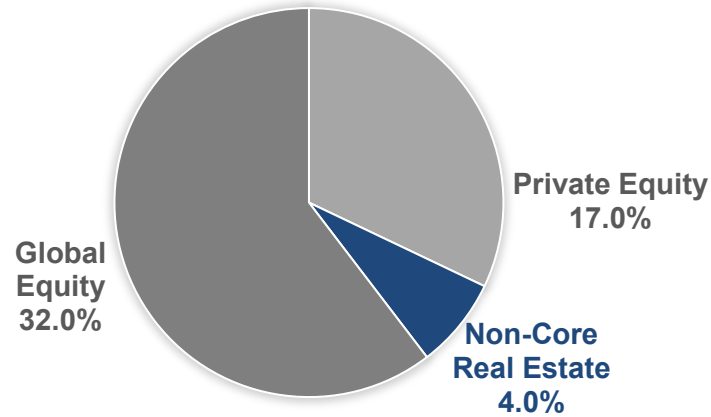
## TIPS

- Inflation hedge through public markets
- Diversification benefits with inflation-linked and interest rate exposure
- Generates income

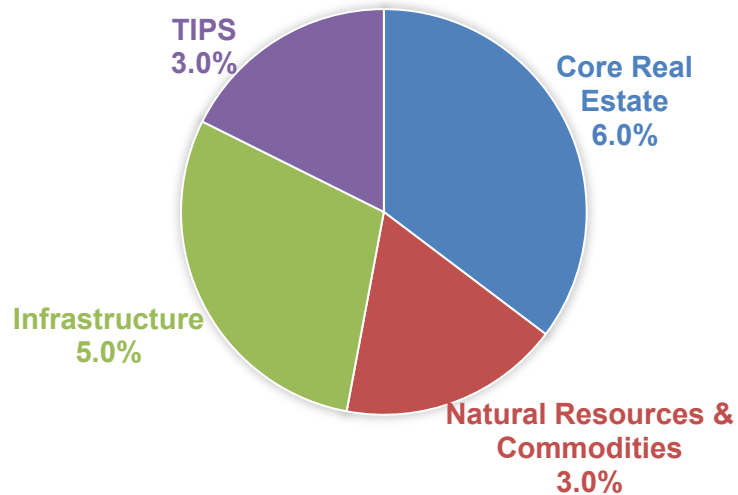
# Real Assets: Portfolio Composition



## GROWTH



## REAL ASSETS



- Each sub-category has different objectives and characteristics

Asset Class	Market Value	Allocation	Policy Target	Over/Under	Target Range +/-	Target Range %
<b>Growth</b>	<b>41,193</b>	<b>52.8%</b>	<b>53%</b>	<b>(0.2)%</b>	<b>+/- 8%</b>	<b>45-61%</b>
Global Equity	27,419	35.1%	32%	3.1%	+/- 7%	25-39%
Private Equity	12,677	16.2%	17%	(0.8)%	+3/- 5%	12-20%
Non-Core Real Estate	1,097	1.4%	4%	(2.6)%	+/- 2%	2-6%
<b>Real Assets &amp; Inflation Hedges</b>	<b>12,293</b>	<b>15.8%</b>	<b>17%</b>	<b>(1.2)%</b>	<b>+/- 3%</b>	<b>14-20%</b>
Core Real Estate	3,370	4.3%	6%	(1.7)%	+/- 3%	3-9%
Infrastructure	4,263	5.5%	5%	0.5%	+1/- 3%	2-6%
Natural Resources / Commodities	2,318	3.0%	3%	0.0%	+/- 2%	1-5%
TIPS	2,342	3.0%	3%	0.0%	+/- 3%	0-6%

Note: Allocation weights are as of March 31, 2024; private assets based on latest asset valuation including any actual cash flows.

# Real Assets: Policy Targets & Benchmarks



Asset Class	Policy Target	Policy Target 7/1/24	Benchmark	Benchmark 7/1/24	Asset Allocation/ Benchmark changes?
<b>Growth</b>	<b>53%</b>	<b>48%</b>	<b>Custom Blend</b>	<b>Custom Blend</b>	-
Non-Core Real Estate	3%	2%	NFI ODCE (three-month lag) + 225bps	NFI ODCE (three-month lag) + 225bps	Allocation
<b>Real Assets &amp; Inflation Hedges</b>	<b>17%</b>	<b>15%</b>	<b>Custom Blend</b>	<b>Custom Blend</b>	-
Core Real Estate	6%	5%	NFI ODCE (three-month lag)	NFI ODCE (three-month lag)	Allocation
Infrastructure	5%	4%	Dow Jones Brookfield Global Infrastructure Composite	Dow Jones Brookfield Global Infrastructure Composite Index (3-month lag)	Allocation & Benchmark
Natural Resources / Commodities	3%	3%	33% Bloomberg Commodity / 66% S&P Global Natural Resources	65% S&P Global NR (3-month lag) 35% NCREIF Farmland	Benchmark
TIPS	3%	3%	Bloomberg Barclays U.S. TIPS	Bloomberg US TIPS (0-5YRS) Index	Benchmark



# Core Real Estate

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# Core Real Estate: Role and Objectives



## Role

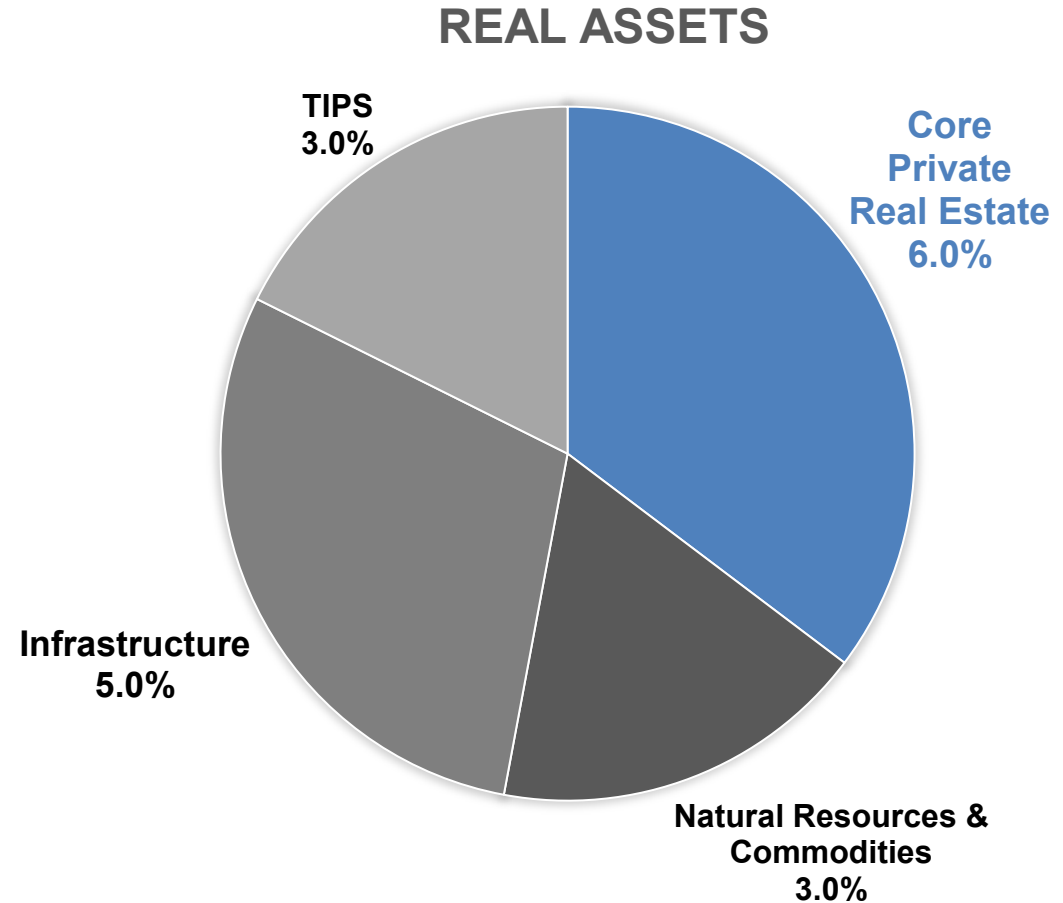
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- Focus on capital preservation and current income
- Hard assets provide inflation protection
- Diversified sources of returns less correlated with growth assets

## Objectives

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- Objective is to help produce income as well as hedge against inflation while diversifying the Fund
- Use Core commingled funds for “beta exposure” to the benchmark with positive tilt in Industrial, Multifamily, and niche sectors including Life Science and Storage.





# Core Real Estate: Portfolio Structure

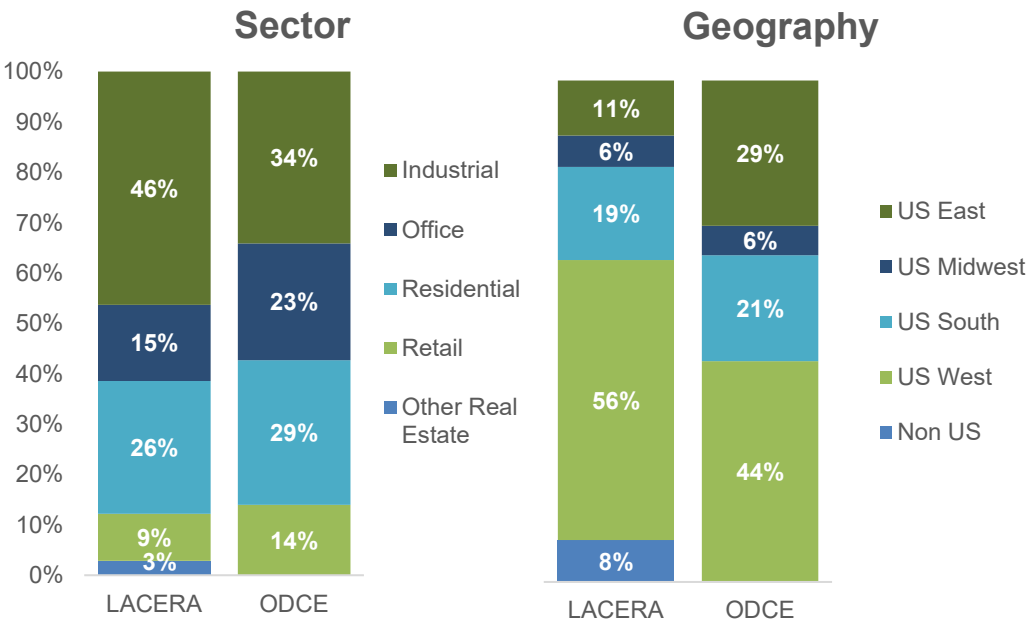


## Portfolio Structure

- Portfolio is in transition period. Legacy is largely separate account, directly held. All recent and future investments in fund structures
- Designed to be low to moderate risk relative to ODCE benchmark, low to moderate expected alpha

	Current Allocation
Separate Account Assets	64.7%
Core/Core+ Funds	35.3%

Portfolio Guidelines	
<b>Benchmark</b>	NFI ODCE (3-Month lagged)
<b>Industry Sector</b>	Apartment, Industrial, Office, Retail, Other
<b>Sector Target Allocation Range</b>	+/- 15% relative to ODCE weights
<b>Geography</b>	Globally: North America 85% - 100%; Europe 0% - 10%; Asia 0% - 10%; Emerging Markets 0% - 5%; Within the US: +/- 15% relative to ODCE regional weights
<b>Investment Size/Range</b>	Minimum commitment size \$10 million
<b>Manager Concentration</b>	35% maximum limit to a single manager
<b>Fund Concentration</b>	LACERA maximum 30% limit of total LP commitments
<b>Leverage</b>	50% Limit
<b>Volatility</b>	Tracking Error: Long-term target <2%



Note: As of December 31, 2023.

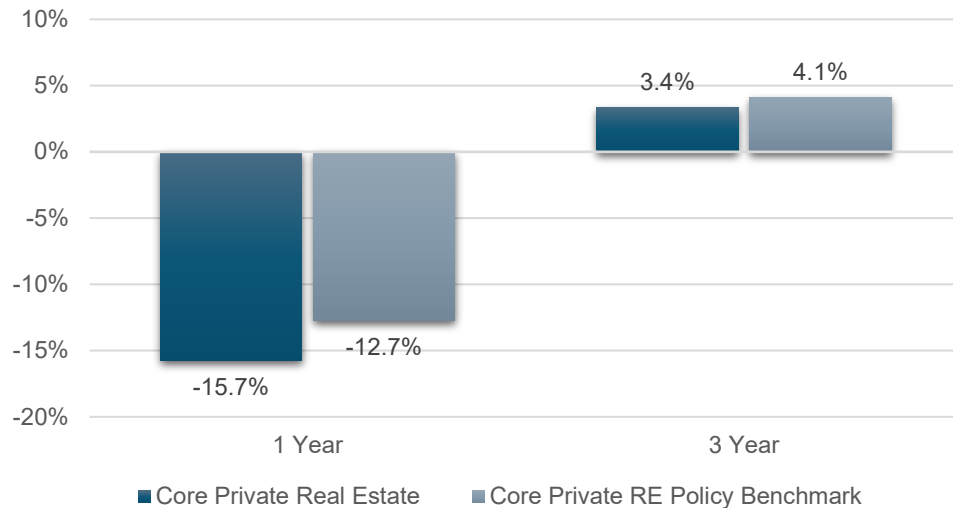
Approved by the BOI in the 2024 Real Estate Guideline Review.

# Core Real Estate: Performance



- Performance has lagged ODCE benchmark in recent periods. Asset sales have resulted in realized losses relative to appraised values as portfolio is transitioning to new structure.
- Recent underperformance has been in separate account portfolio.
- Overweight in industrial sector helped mitigate some losses

Trailing 1-year and 3-year returns as of March 31, 2024  
Core Real Estate



	MV (\$M)	Quarter		1-Year		2-Year	
		Return	BM	Return	BM	Return	BM
<b>Total Core Real Estate</b>	\$3,370	-6.5%	-5.0%	-15.7%	-12.7%	-3.6%	-3.6%
<b>Core Funds</b>	\$1,193	-2.7%	-5.0%	-9.6%	-12.7%	-0.8%	-3.6%
<b>Core Separate Accounts*</b>	\$2,178	-8.1%	-5.0%	-18.1%	-12.7%	-4.8%	-3.6%

	QTD	FYTD	1 Year	3 Year	5 Year	10 Year	SI
<b>Core Real Estate</b>	-6.5%	-12.6%	-15.7%	3.4%	2.2%	5.6%	6.5%
<b>Core RE Policy Benchmark</b>	-5.0%	-9.7%	-12.7%	4.1%	3.6%	6.7%	6.4%
<b>Excess</b>	-1.5%	-2.9%	-3.0%	-0.7%	-1.4%	-1.1%	0.1%

Vintage Year	Commitments (mm)	Market Value (mm)	Total Value (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
2013	--	5.2	541.8	1.24x	1.25x	5.5%	0.86	3rd
2014	208.0	489.6	1,436.5	0.91x	1.38x	6.4%	1.02	3rd
2015	--	569.5	1,357.0	0.85x	1.47x	10.6%	1.30	2nd
2016	--	202.4	504.0	0.86x	1.44x	9.0%	1.19	2nd
2017	125.0	520.2	1,442.6	0.76x	1.18x	5.8%	1.00	3rd
2018	--	92.2	178.3	0.56x	1.16x	5.1%	1.02	4th
2019	100.0	475.3	3,660.3	1.25x	1.44x	9.0%	1.02	2nd
2023	1,200.0	480.4	482.0	0.00x	0.96x	-8.4%	0.92	2nd
<b>Total Core Real Estate</b>	<b>1,633.0</b>	<b>2,834.7</b>	<b>9,602.6</b>					

Data is from State Street as of March 31, 2024.

\* In January 2022, the BOI approved a recommendation to restructure the Real Estate portfolio from separate account vehicles to open-ended fund vehicles to improve asset diversification and reduce operational risk.



# Non-Core Real Estate

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# Non-Core Real Estate: Role and Objectives



## Role

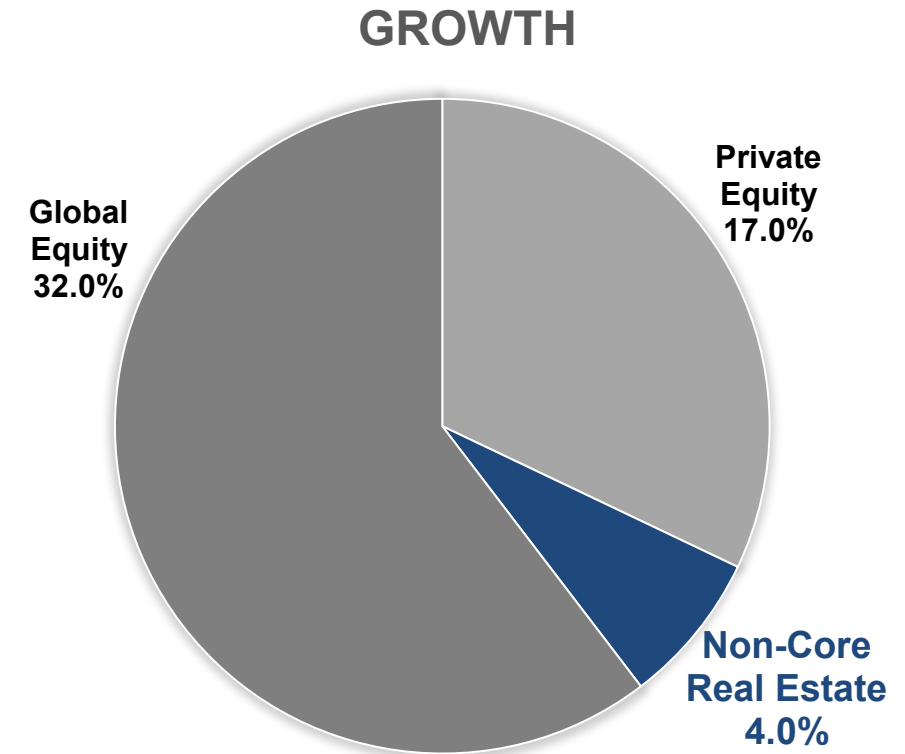
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- Diversification and returns with a greater risk-return than Core
- Private investments largely in the U.S., Europe, and Asia
- Focused on driving growth and capital appreciation through property enhancement processes or ground up development

## Objectives

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- Objective is to be the primary driver of long-term returns for the Fund
- Use Non-Core commingled funds for “alpha seeking” returns (+200 bps from Value-Add and +300 from Opportunistic) globally, with potential to invest in more dedicated niche sector funds

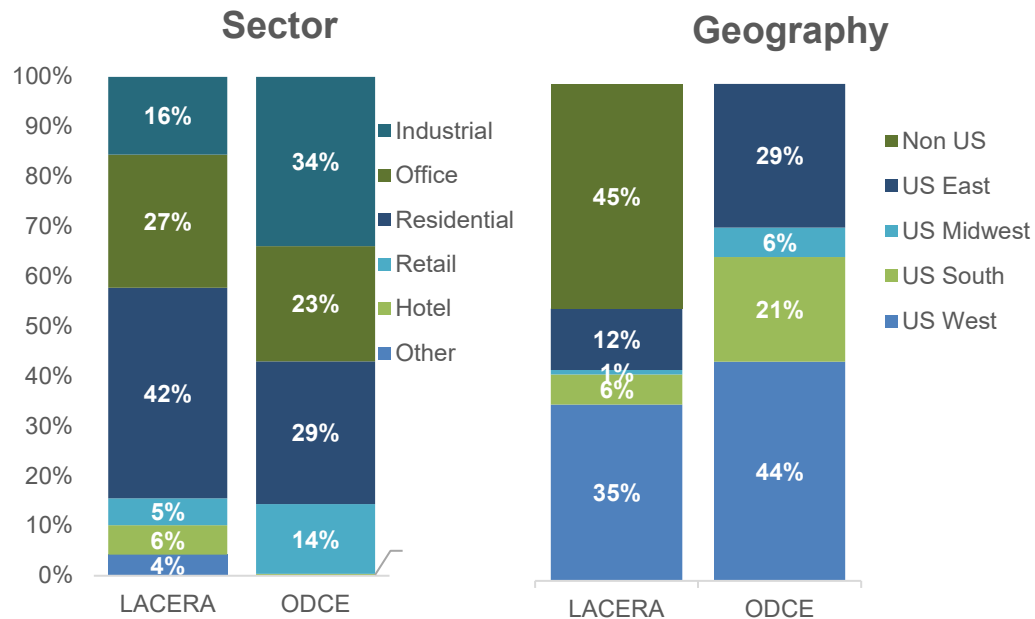


# Non-Core Real Estate: Portfolio Structure



## Portfolio Structure

- Investments through fund vehicles though some legacy non-Core investments have been done in separate account which are being phased out of structure
- Designed to be higher risk and return relative to core ODCE



Note: As of December 31, 2023.

	Current Allocation
Separate Account Assets	14.7%
Core/Core+ Funds	85.3%

Portfolio Guidelines	
Benchmark	NFI ODCE + 225 bps (3-Month lagged)
Sub-Asset Class	Value-Add; Opportunistic
Industry Sector	Apartment, Industrial, Office, Retail, Other
Sector Target Allocation Range	0% - 45%
Geography	North America 35% - 65%; Europe 15% - 45%; Asia 5% - 35%; Emerging Markets 0% - 15%
Investment Size/Range	Minimum commitment size \$10 million
Manager Concentration	20% maximum limit to a single manager
Fund Concentration	LACERA maximum 30% limit of total LP commitments
Leverage	Value-Add 65% Limit; Opportunistic 80% Limit

Approved by the BOI in the 2024 Real Estate Guideline Review.

# Non-Core Real Estate: Performance

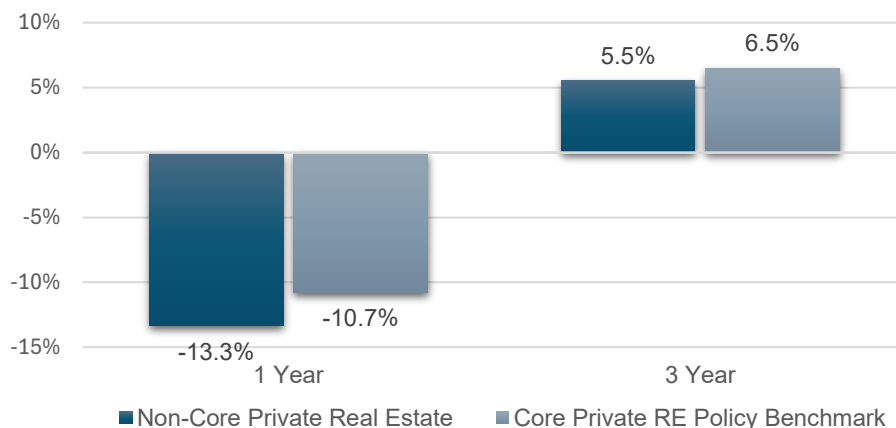


- Recent absolute performance has suffered as write-downs have hit non-core assets
- Non-Core separate account assets have underperformed as losses on realized asset sales have been below appraised carrying values
- Longer term 5,10-year IRRs have been better in post GFC-period
- Non-Core has poor recent performance but should provide attractive performance for capital deployed today in stressed environment favoring capital providers

	MV (\$M)	Quarter		1-Year		2-Year	
		Return	BM	Return	BM	Return	BM
<b>Total Non-Core Real Estate</b>	\$1,096	-4.9%	-4.5%	-13.3%	-10.7%	-2.3%	-1.4%
<b>Non-Core Funds</b>	\$935	-4.9%	-4.5%	-12.1%	-10.7%	-1.8%	-1.4%
<b>Non-Core Separate Accounts*</b>	\$161	-4.7%	-4.5%	-17.5%	-10.7%	-4.7%	-1.4%

	QTD	FYTD	1 Year	3 Year	5 Year	10 Year	SI
<b>Non-Core Real Estate</b>	-4.9%	-12.9%	-13.3%	5.5%	6.5%	10.3%	4.0%
<b>Non-Core RE Policy Benchmark</b>	-4.5%	-8.1%	-10.7%	6.5%	6.0%	9.3%	10.4%
<b>Excess</b>	-0.4%	-4.8%	-2.6%	-0.9%	0.5%	1.0%	-6.4%

Trailing 1-year and 3-year returns as of March 31, 2024  
Non-Core Real Estate



Vintage Year	Commitments (mm)	Market Value (mm)	Total Value (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
2015	20.0	32.8	107.5	0.77	1.10	1.99%	0.90	4th
2016	150.0	177.5	334.7	0.64x	1.36x	10.6%	1.17	2nd
2017	54.0	162.5	212.0	0.34x	1.45x	9.0%	1.24	3rd
2018	150.0	100.1	203.7	0.63x	1.24x	6.2%	1.01	3rd
2019	312.7	218.5	386.5	0.55x	1.27x	10.7%	1.18	2nd
2020	--	--	89.3	1.14x	1.14x	6.0%	1.16	3rd
2021	181.0	99.4	104.5	0.05x	1.00x	-0.2%	0.97	3rd
2022	710.0	228.3	238.8	0.04x	1.01x	1.2%	0.95	2nd
2023	150.0	23.5	23.5	0.00x	0.91x	-11.0%	0.90	2nd
<b>Total Non-Core Real Estate</b>	<b>1,727.7</b>	<b>1,042.7</b>	<b>1,700.5</b>					

Data is from State Street as of March 31, 2024.

\* In January 2022, the BOI approved a recommendation to restructure the Real Estate portfolio from separate account vehicles to open-ended fund vehicles to improve asset diversification and reduce operational risk.



# Infrastructure

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## Role

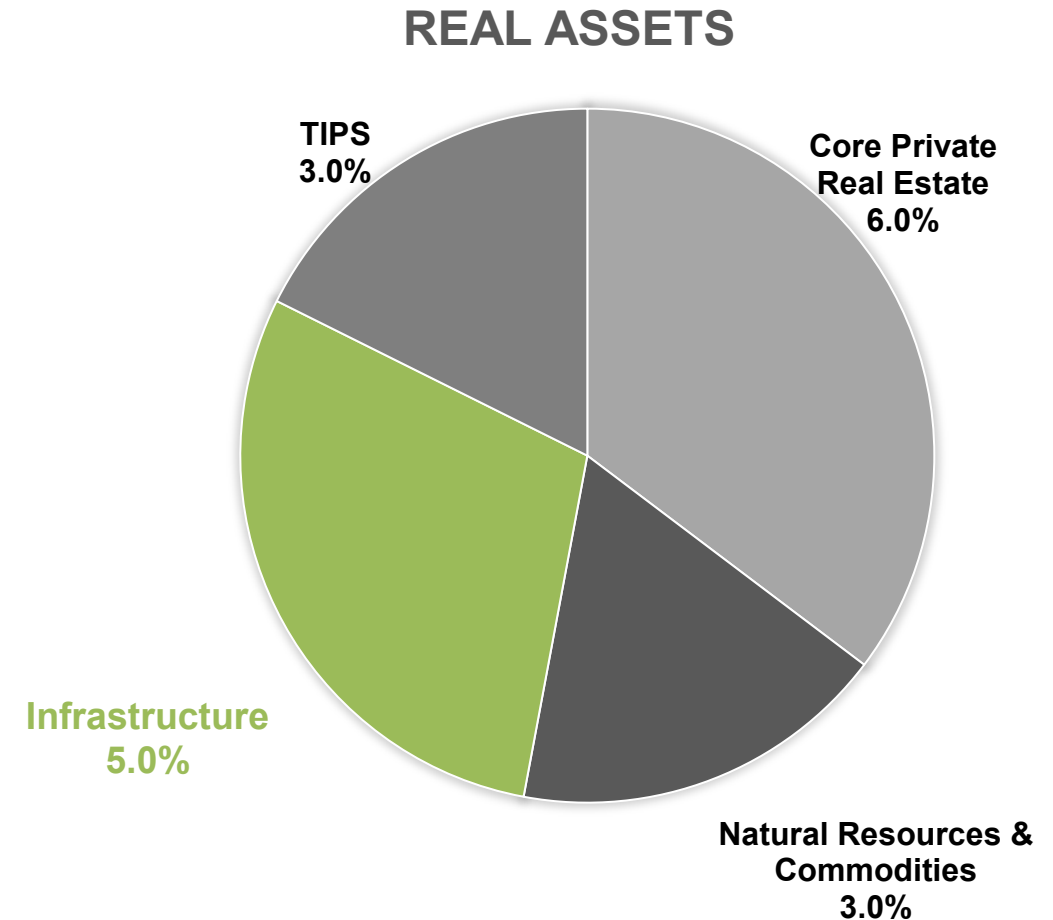
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- Diversification: more defensive than public equities
- Provide consistent income

## Objectives

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- Contracted and regulated assets to provide consistent returns less correlated to GDP growth
- Some potential allocation for higher-returning core plus, value added, opportunistic spectrum
- Co-investments and other structures for lower fees and more intentional allocation





# Infrastructure: Portfolio Structure



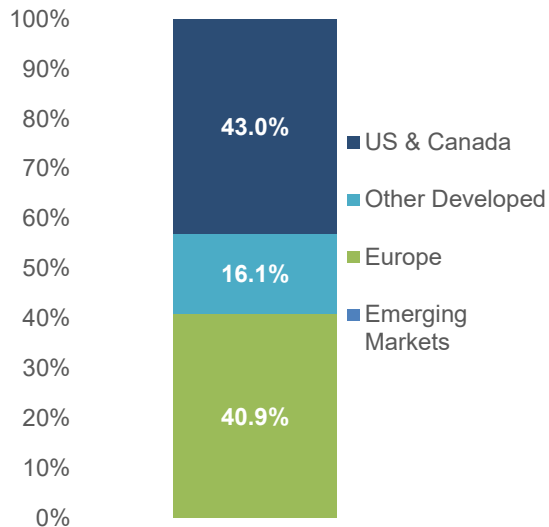
## Portfolio Structure

- Combination of public market equities and private fund assets in core and non-core strategies
- Public Market portfolio is expected to diminish as private commitments are made

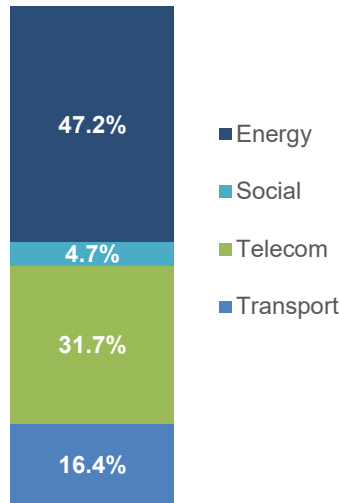
	Actual Allocation (\$MM)		Private Market Allocation Ranges	
<b>Public Market Equities</b>	2,153	51%		
<b>Core Private Infrastructure</b>	1,624	38%	50%	75%
<b>Non-Core Private Infrastructure</b>	437	10%	25%	50%
<b>Co-Investments</b>	49	1%	0%	4%
<b>Total Infrastructure</b>	<b>4,263</b>	<b>100%</b>		

Portfolio Guidelines				
<b>Sub-Asset Class</b>	Infrastructure (5% Target +1%/ -3%)			
<b>Sector</b>	<b>Energy</b>	<b>Telecom</b>	<b>Transport</b>	<b>Social</b>
<b>Target Allocation Range</b>	Core/Core+: 30%-70%	Core/Core+: 10%-50%	Core/Core+: 5%-25%	Core/Core+: 0%-20%
<b>Allocation Range</b>	Core / Core+: 50-75%; Non-Core: 25-50%			
<b>Geography</b>	US & Canada: 25%-75%; Europe: 25%-75%; Other Developed: 0%-25%; Emerging Markets: 0%-20%			
<b>Investment Size/Range</b>	Minimum commitment size \$10 million			
<b>Manager Diversification</b>	Total committed amount to a single manager no greater than 30% of total exposure for Real Assets			
<b>Fund Concentration</b>	LACERA no more than 40% of total LP commitments for each fund			

Geography



Sector



Note: As of March 31, 2024.

Approved by the BOI in the 2024 Real Assets Structure Review.

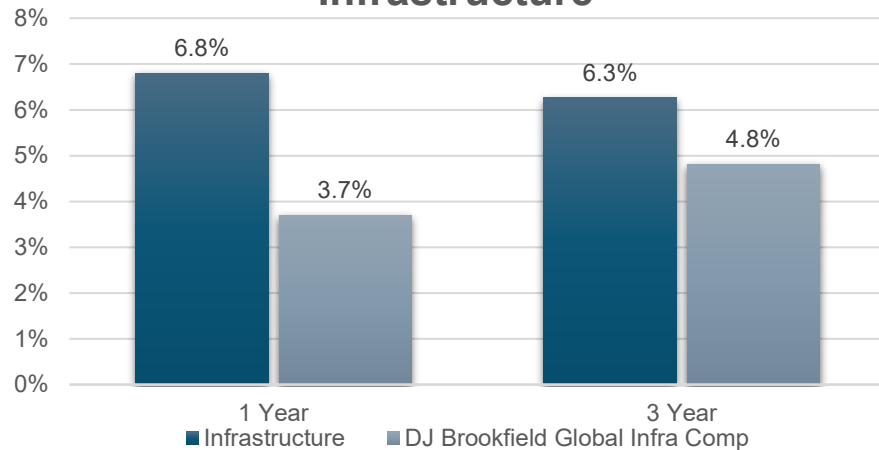
# Infrastructure: Performance



- Overall Infrastructure outperformed benchmark, consistent with goals and portfolio structure
- Public Market portfolio exceeded its benchmark over all time periods
- Private Funds are growing and providing stable returns relative to more volatile public benchmark.
- Core private funds with lower risk and return expectations are the basis for the program and generally perform with lower fund quartile rankings relative to more opportunistic strategies

	MV (\$MM)	QTD	FYTD	1 Year	3 Year	SI	SI date
<b>Public Market Infrastructure Equities</b>	<b>2,153</b>	<b>2.1%</b>	<b>5.8%</b>	<b>6.0%</b>	<b>5.3%</b>	<b>6.1%</b>	<b>06/2019</b>
<b>DJ Brookfield Global Infra Comp</b>		0.6%	4.1%	3.7%	4.8%	4.0%	
<b>Excess</b>		1.5%	1.6%	2.3%	0.5%	2.1%	
<b>Private Market Infrastructure Equity</b>	<b>2,110</b>	<b>2.5%</b>	<b>7.3%</b>	<b>9.0%</b>	<b>6.7%</b>	<b>5.4%</b>	<b>11/2020</b>
<b>Private Infrastructure Custom BM</b>		11.2%	3.0%	6.2%	6.7%	7.1%	
<b>Excess</b>		-8.7%	4.2%	2.8%	0.0%	-1.7%	
<b>Total Infrastructure</b>	<b>4,263</b>	<b>2.2%</b>	<b>6.1%</b>	<b>6.8%</b>	<b>6.3%</b>	<b>7.2%</b>	<b>06/2019</b>
<b>DJ Brookfield Global Infra Comp</b>		0.6%	4.1%	3.7%	4.8%	4.0%	
<b>Excess</b>		1.6%	1.9%	3.1%	1.4%	3.2%	

Trailing 1-year and 3-year returns as of March 31, 2024  
Infrastructure



Vintage Year	Commitments (mm)	Market Value (mm)	Total Value (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
2020	330.0	288.8	316.5	0.11x	1.22x	10.2%	1.03	3rd
2021	1,173.3	1,058.4	1,112.7	0.05x	1.07x	6.8%	1.01	3rd
2022	962.0	724.3	751.0	0.04x	1.12x	7.9%	1.04	2nd
2023	96.0	48.9	48.9	0.00x	1.20x	22.4%	1.14	1st
<b>Total Private Infrastructure</b>	<b>2,561.3</b>	<b>2,120.4</b>	<b>2,229.2</b>					

Data is from State Street as of March 31, 2024.



# Natural Resources

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# Natural Resources: Role and Objectives



## Role

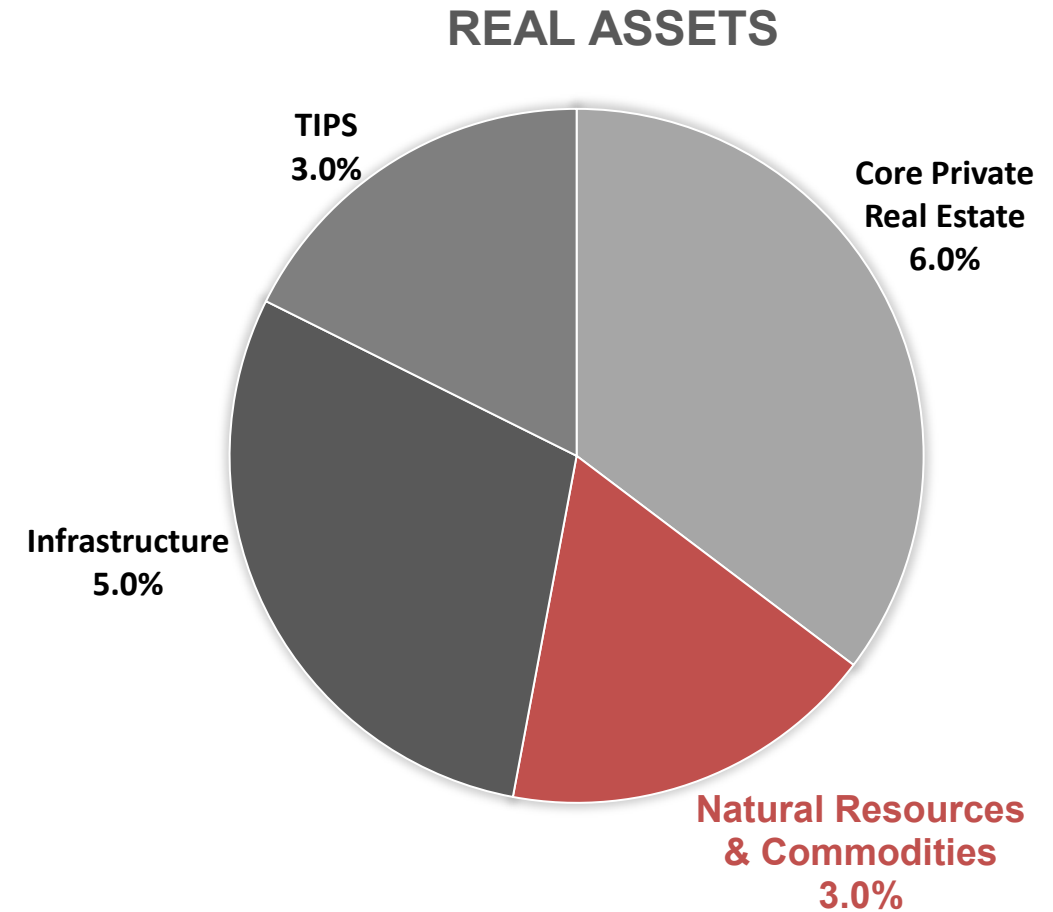
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- Diversify broad equity risk
- Serve as inflation hedge
- Generate income

## Objectives

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- Provide returns less correlated with broader markets
- Generate income and / or stable capital appreciation
- Higher correlation to inflation



# Natural Resources: Portfolio Structure



## Portfolio Structure

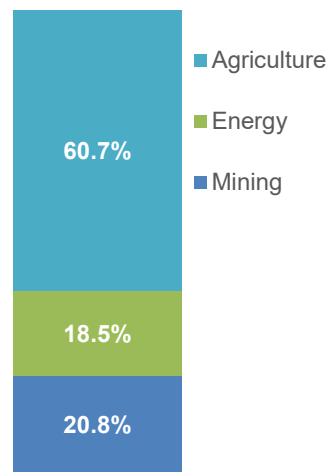
- Combination of public market strategies (Natural resource equities and commodities) and private natural resource strategies
- Commodities are being eliminated with new SAA/benchmark changes
- Remaining public market equity assets will be reduced as additional private commitments are made and drawn down

	Actual Allocation (millions)	
<b>Commodities</b>	645	28%
<b>Public Natural Resources Equities</b>	496	21%
<b>Private Natural Resources Equity</b>	1,151	50%
<b>Co-Investments</b>	26	1%
<b>Total Natural Resources</b>	<b>2,318</b>	<b>100%</b>

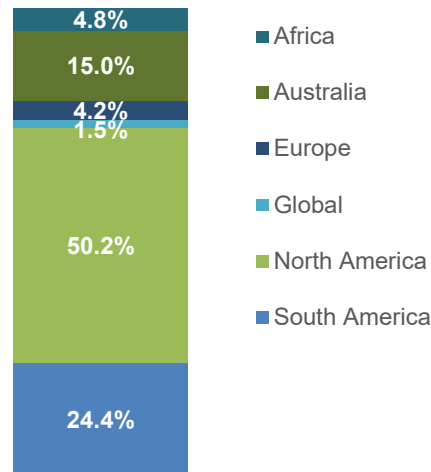
## Portfolio Guidelines

Sub-Asset Class	Natural Resources (3% Target +/-2%)		
Sector	Energy Transition	Mining	Agriculture & Farmland
<b>Target Allocation Range</b>	0-70%	15-70%	15-70%
<b>Allocation Range</b>	-		
<b>Geography</b>	Global with non-OECD up to 40%		
<b>Investment Size/Range</b>	Minimum commitment size \$10 million		
<b>Manager Diversification</b>	Total committed amount to a single manager no greater than 30% of total exposure for Real Assets		
<b>Fund Concentration</b>	LACERA no more than 40% of total LP commitments for each fund		

### Sector



### Geography



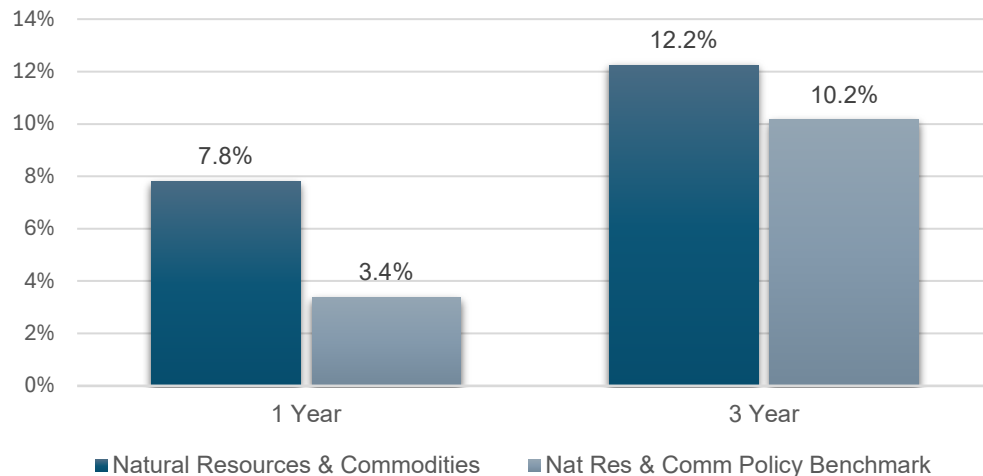
Note: As of March 31, 2024.

# Natural Resources: Performance



- Overall Natural Resources exceeded market benchmark, consistent with goals and portfolio structure
- Public market portfolio managers exceeded their stated benchmarks for commodities and natural resource equities over one and three year periods
- Private funds assets are providing stable returns relative to the more volatile equity and commodity benchmarks

Trailing 1-year and 3-year returns as of March 31, 2024  
Natural Resources & Commodities



Data is from State Street as of March 31, 2024.

	MV (\$MM)	QTD	FYTD	1 Year	3 Year	SI	
<b>Commodities</b>	<b>645</b>	<b>3.2%</b>	<b>3.3%</b>	<b>0.9%</b>	<b>9.8%</b>	<b>-0.9%</b>	<b>07/2007</b>
Bloomberg Comm Index TR		2.2%	2.1%	-0.6%	9.1%	-2.1%	
Excess		1.0%	1.2%	1.4%	0.7%	1.1%	
<b>Public Natural Resource Equities</b>	<b>496</b>	<b>5.0%</b>	<b>11.2%</b>	<b>6.9%</b>	<b>9.1%</b>	<b>10.7%</b>	<b>06/2019</b>
Nat Res & Comm Policy Benchmark		2.0%	9.3%	5.0%	9.0%	11.1%	
Excess		3.0%	2.0%	1.9%	0.1%	-0.3%	
<b>Private Natural Resource Equity</b>	<b>1,177</b>	<b>6.5%</b>	<b>8.8%</b>	<b>14.0%</b>	<b>12.8%</b>	<b>-2.2%</b>	<b>04/2019</b>
PE - Real Assets Custom Benchmark		1.0%	0.3%	-1.0%	13.2%	12.6%	
Excess		5.6%	8.5%	15.0%	-0.4%	-14.8%	
<b>Total Natural Resources &amp; Commodities</b>	<b>2,318</b>	<b>5.2%</b>	<b>7.6%</b>	<b>7.8%</b>	<b>12.2%</b>	<b>-0.3%</b>	<b>07/2007</b>
Nat Res & Comm Policy Benchmark		2.1%	7.0%	3.4%	10.2%	-1.5%	
Excess		3.0%	0.6%	4.4%	2.1%	1.1%	

Vintage Year	Commitments (mm)	Market Value (mm)	Total Value (mm)	Distributed to Paid-In	Total Value to Paid-In	Since Inception Net IRR	Since Inception PME	Quartile Ranking
2004	50.0	0.0	91.4	1.83x	1.83x	31.1%	1.40	1st
2011	350.0	320.9	352.9	0.12x	1.37x	18.5%	1.22	1st
2014	500.0	426.2	518.6	0.20x	1.10x	2.4%	0.85	3rd
2021	250.0	159.7	215.3	0.30x	1.16x	8.8%	1.03	3rd
2022	250.0	166.6	166.6	0.00x	1.22x	15.7%	1.11	1st
2023	604.0	100.8	100.8	0.00x	1.00x	0.6%	0.93	4th
2024	341.0	0.0	0.0	--	--	--	--	--
<b>Total Private Natural Resources</b>	<b>2,345.0</b>	<b>1,174.2</b>	<b>1,445.6</b>					



# Treasury Inflation Protected Securities (TIPS)

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# TIPS: Role and Objectives



## Role

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- Inflation hedge through public markets
- Income generation through coupon payments
- Diversification benefits with inflation-linked and interest rate exposure

## Objectives

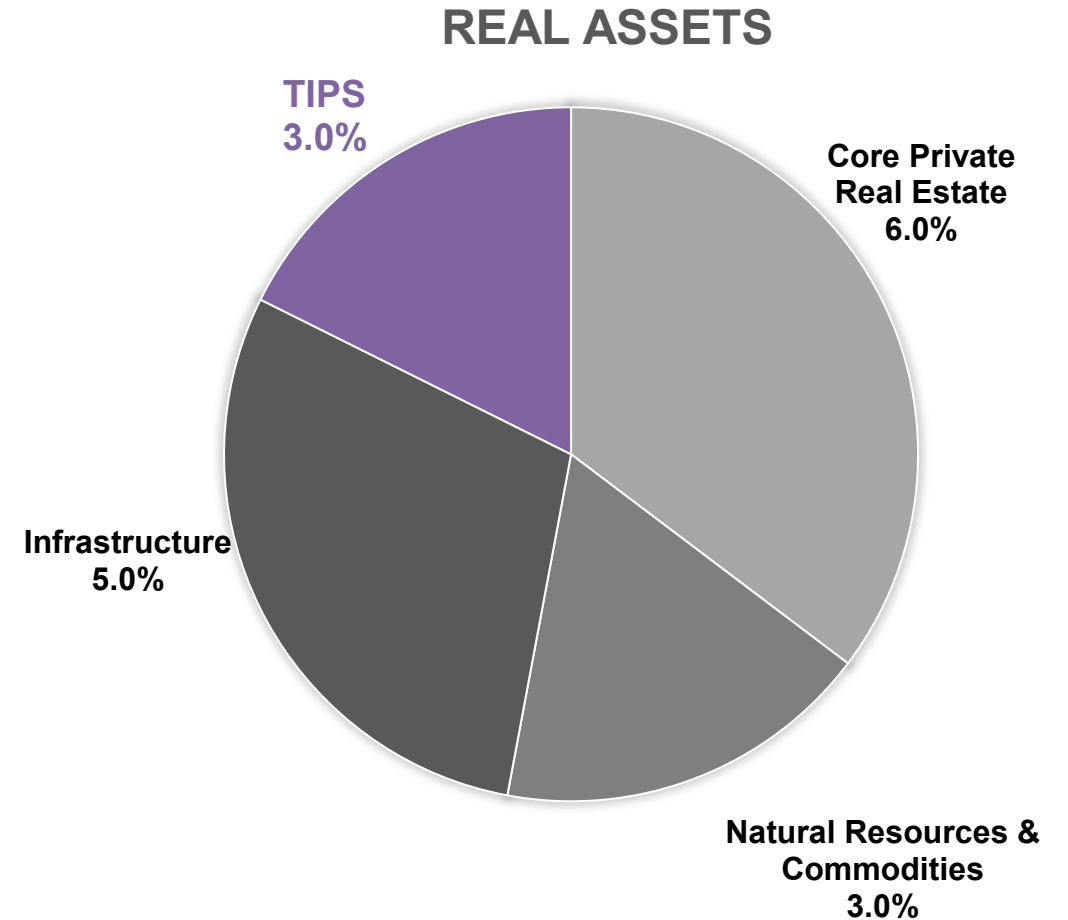
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- Protection against unanticipated changes in inflation

## Implementation

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- LACERA has a 3% target allocation to Treasury Inflation Protected Securities (“TIPS”)
- Invested through a passive index investment





# TIPS: Structure & Performance



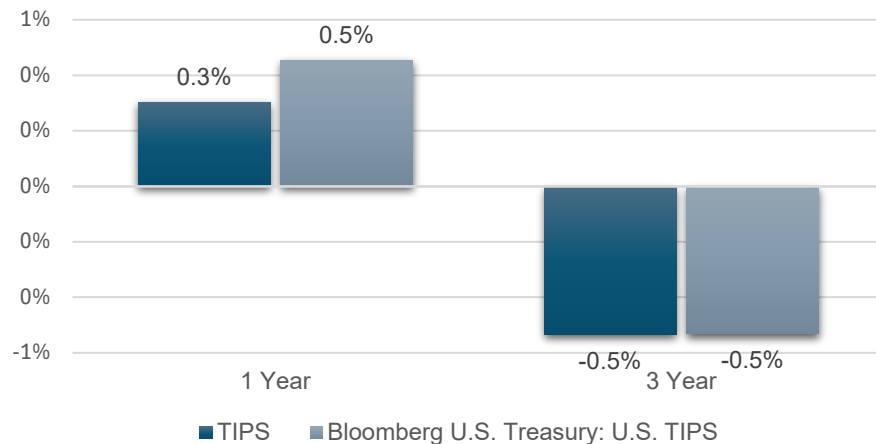
- A passive strategy approach designed to replicate benchmark positioning and performance
- Performed in-line or slightly below market benchmark, consistent with goals and portfolio structure
- Benchmark is being replaced with shorter term benchmark to reduce duration risk
- Less than five basis points of detractor from performance since inception due to sampling mismatch and transaction costs

	Actual Allocation		Effective Duration	Yield to Worst (YTW)
<b>TIPS</b>	2,341	3%	6.71 years	4.3%

	MV	QTD	FYTD	1 Year	3 Year	SI	SI Date
<b>Treasury Inflation Protected Securities</b>	2,341	0.0%	1.8%	0.3%	-0.5%	2.4%	5/2019
<b>Bloomberg U.S. Treasury: TIPS</b>		-0.1%	1.9%	0.5%	-0.5%	2.5%	
<b>Excess</b>		0.1%	-0.1%	-0.2%	0.0%	-0.1%	

Trailing 1-year and 3-year returns as of March 31, 2024

## TIPS



Data is from State Street as of March 31, 2024.

Portfolio Guidelines	
<b>Sub-Asset Class</b>	TIPS (3% Target +/-3%)
<b>Benchmark</b>	Bloomberg Barclays U.S. TIPS
<b>Leverage</b>	None
<b>Duration</b>	+/-0.2 years vs benchmark duration
<b>Securities Lending</b>	Yes



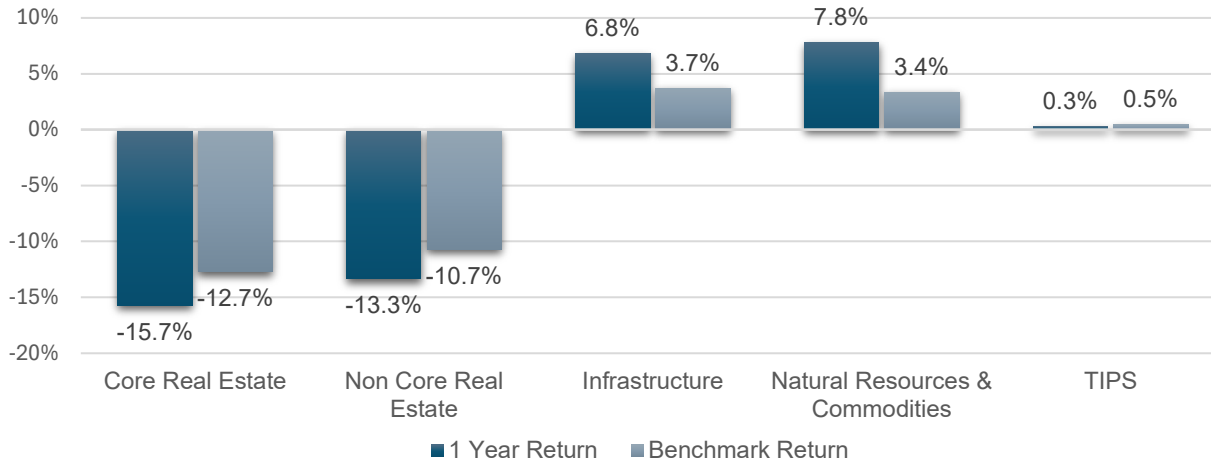
# Performance Summary

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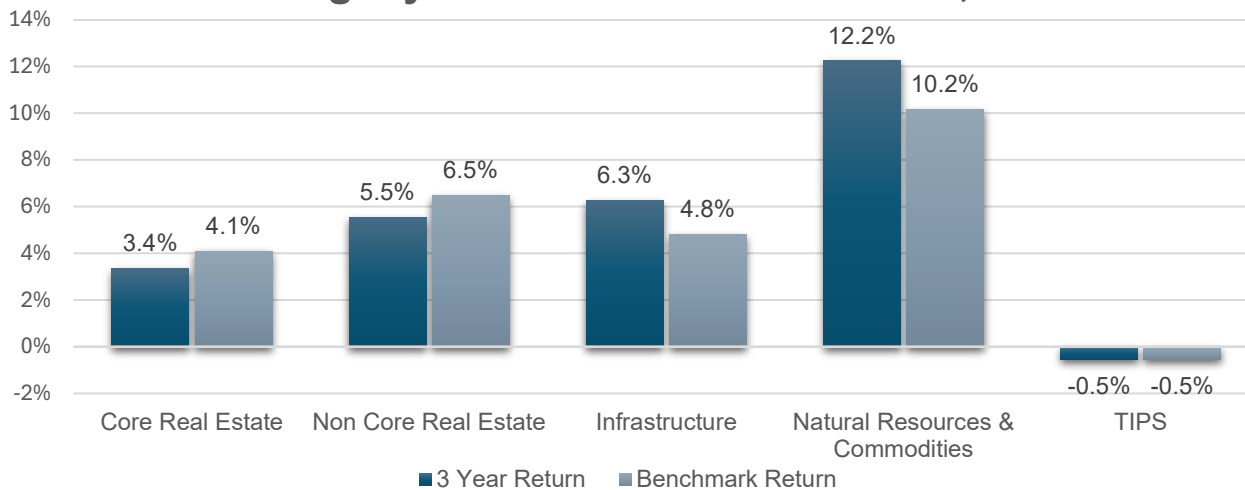
# Real Assets and Inflation Hedges: Performance



Trailing 1-year returns as of March 31, 2024



Trailing 3-year returns as of March 31, 2024

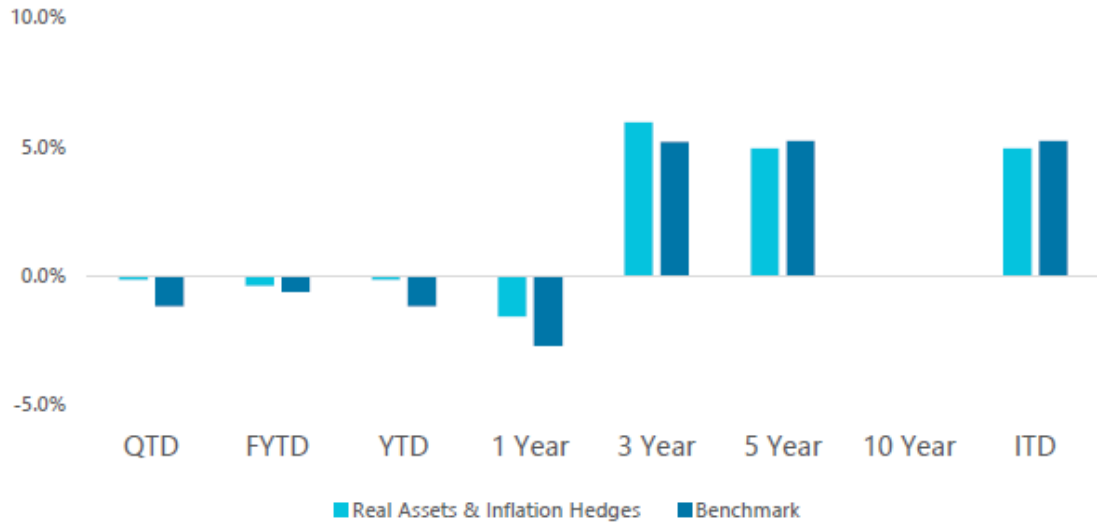


- Real Estate performance has lagged ODCE benchmark in recent periods. Asset sales have resulted in realized losses relative to appraised values as portfolio is transitioning to new structure
- Real Estate portfolio is in transition period. Legacy is largely separate account, directly held. All recent and future investments in fund structures
- Infrastructure outperformed benchmark, consistent with goals and portfolio structure. Core private funds with lower risk and return expectations are the basis for the program
- Natural Resources & Commodities has had outperformance versus policy benchmark; Private funds assets are providing stable returns relative to the more volatile equity and commodity benchmarks
- TIPS portfolio performed in-line or slightly below market benchmark, consistent with goals and portfolio structure

# Real Assets & Inflation Hedges: Performance Summary

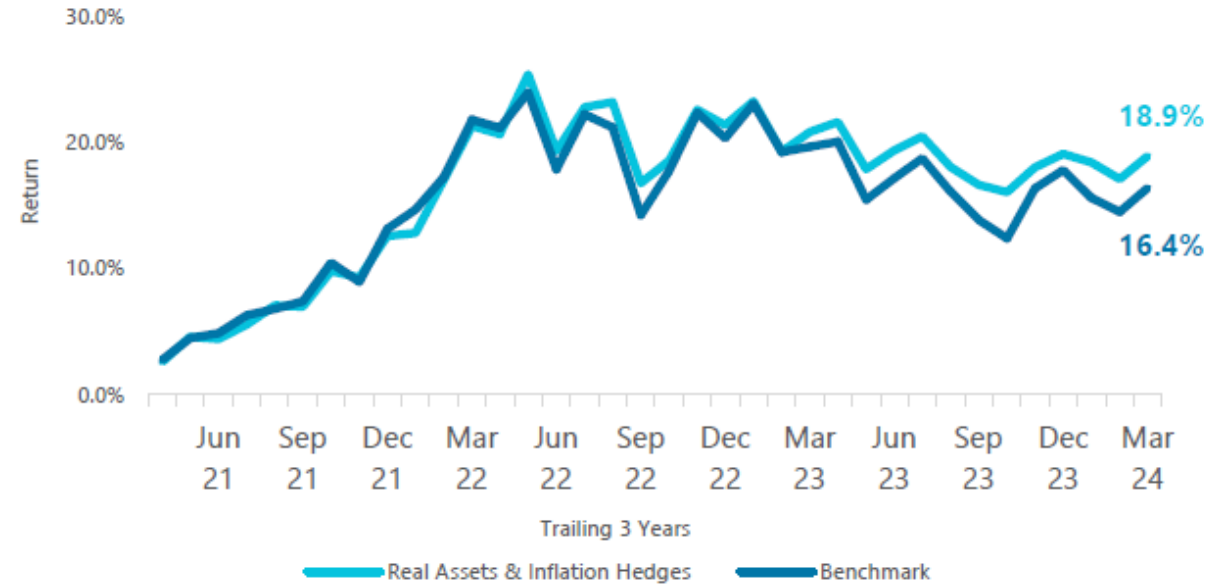


## Performance (net)



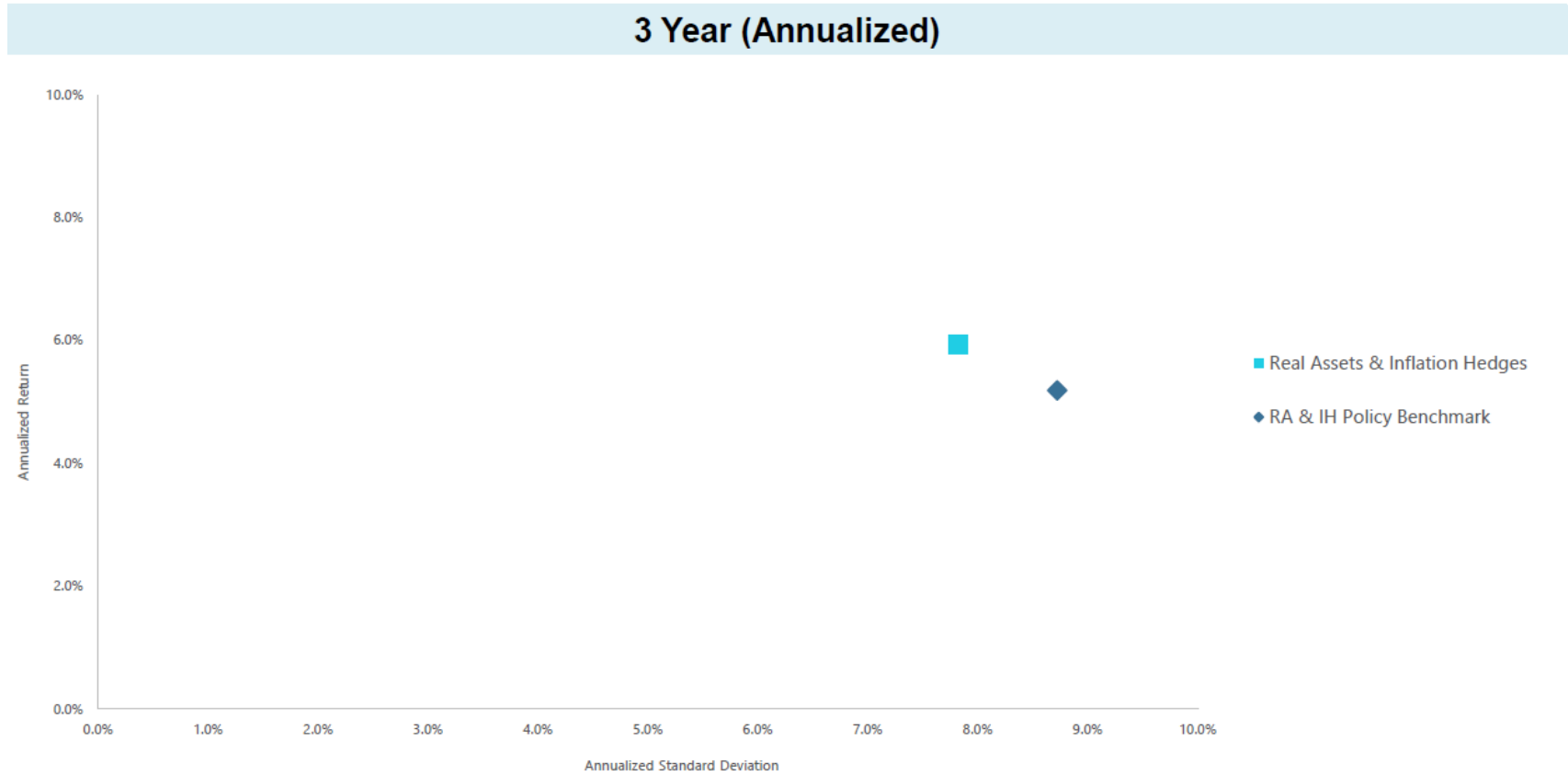
	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
<b>Real Assets &amp; Inflation Hedges</b>	<b>-0.2%</b>	<b>-0.4%</b>	<b>-0.2%</b>	<b>-1.6%</b>	<b>5.9%</b>	<b>4.9%</b>	--	<b>4.9%</b>
Benchmark	-1.2%	-0.7%	-1.2%	-2.7%	5.2%	5.2%	--	5.2%
Excess	1.0%	0.3%	1.0%	1.1%	0.8%	-0.3%	--	-0.3%

## Cumulative Return



Data is from State Street as of March 31, 2024; Real Assets & Inflation Hedges inception date April 2019. Graphic provided is from the Total Fund 1Q24 Performance Report.

# Real Assets and Inflation Hedges: Risk vs. Return



	Annualized Return	Standard Deviation	Sharpe Ratio	Information Ratio	Beta	Tracking Error
<b>Real Assets &amp; Inflation Hedges</b>	<b>5.9%</b>	<b>7.8%</b>	<b>0.45</b>	<b>0.23</b>	<b>0.85</b>	<b>2.9%</b>
RA & IH Policy Benchmark	5.2%	8.7%				

Data is from State Street as of March 31, 2024.

Graphic provided is from the Total Fund 1Q24 Performance Report.



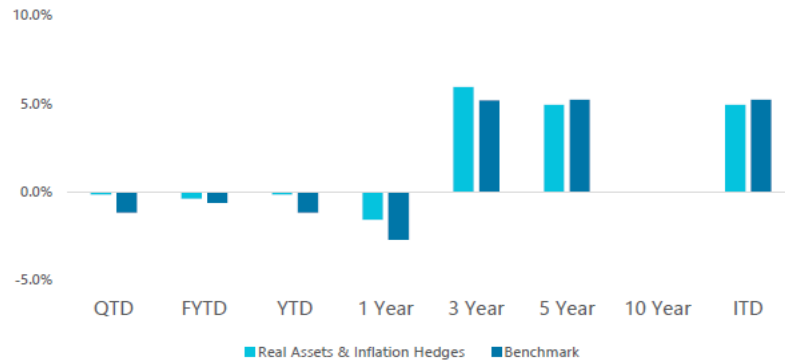
# Appendix

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# Real Assets and Inflation Hedges: Performance Detail



## Performance (net)

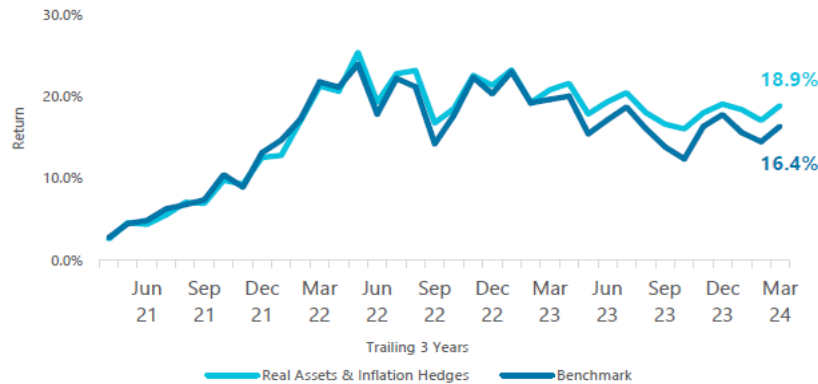


	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD
Real Assets & Inflation Hedges	-0.2%	-0.4%	-0.2%	-1.6%	5.9%	4.9%	--	4.9%
Benchmark	-1.2%	-0.7%	-1.2%	-2.7%	5.2%	5.2%	--	5.2%
Excess	1.0%	0.3%	1.0%	1.1%	0.8%	-0.3%	--	-0.3%

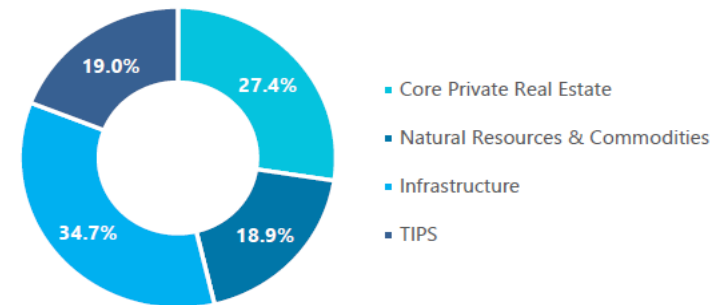
## Functional Category

	QTD	FYTD	YTD	1 Year	3 Year
<b>Core Private Real Estate</b>	-6.5%	-12.6%	-6.5%	-15.7%	3.4%
Core Private RE Policy Benchmark	-5.0%	-9.7%	-5.0%	-12.7%	4.1%
Excess	-1.5%	-2.9%	-1.5%	-3.0%	-0.7%
<b>Natural Resources &amp; Commodities</b>	5.2%	7.6%	5.2%	7.8%	12.2%
Nat Res & Comm Policy Benchmark	2.1%	7.0%	2.1%	3.4%	10.2%
Excess	3.0%	0.6%	3.0%	4.4%	2.1%
<b>Infrastructure</b>	2.2%	6.1%	2.2%	6.8%	6.3%
DJ Brookfield Global Infra Comp	0.6%	4.1%	0.6%	3.7%	4.8%
Excess	1.6%	1.9%	1.6%	3.1%	1.4%
<b>TIPS</b>	0.0%	1.8%	0.0%	0.3%	-0.5%
Bloomberg U.S. Treasury: U.S. TIPS	-0.1%	1.9%	-0.1%	0.5%	-0.5%
Excess	0.1%	-0.1%	0.1%	-0.2%	0.0%

## Cumulative Return



## Exposure



Data is from State Street as of March 31, 2024.

Graphic provided is from the Total Fund 1Q24 Performance Report.

# Real Assets & Inflation Hedges: Performance Detail



## Annualized Net Returns

	% of Composite	Ending Market Value (mm)	Prior Quarter Ending MV (mm)	QTD	FYTD	YTD	1 Year	3 Year	5 Year	10 Year	ITD	Inception Date
<b>Real Assets &amp; Inflation Hedges</b>	<b>100.0%</b>	<b>12,293</b>	<b>12,020</b>	<b>-0.2%</b>	<b>-0.4%</b>	<b>-0.2%</b>	<b>-1.6%</b>	<b>5.9%</b>	<b>4.9%</b>	<b>--</b>	<b>4.9%</b>	<b>Apr-2019</b>
RA & IH Policy Benchmark				-1.2%	-0.7%	-1.2%	-2.7%	5.2%	5.2%	--	5.2%	
<b>Core Private Real Estate</b>	<b>27.4%</b>	<b>3,370</b>	<b>3,597</b>	<b>-6.5%</b>	<b>-12.6%</b>	<b>-6.5%</b>	<b>-15.7%</b>	<b>3.4%</b>	<b>2.2%</b>	<b>5.6%</b>	<b>6.5%</b>	<b>Oct-1985</b>
Core Private RE Policy Benchmark				-5.0%	-9.7%	-5.0%	-12.7%	4.1%	3.6%	6.7%	6.4%	
<b>Natural Resources &amp; Commodities</b>	<b>18.9%</b>	<b>2,318</b>	<b>2,172</b>	<b>5.2%</b>	<b>7.6%</b>	<b>5.2%</b>	<b>7.8%</b>	<b>12.2%</b>	<b>9.0%</b>	<b>0.4%</b>	<b>-0.3%</b>	<b>Jul-2007</b>
Nat Res & Comm Policy Benchmark				2.1%	7.0%	2.1%	3.4%	10.2%	8.5%	-0.6%	-1.5%	
Appian Fund III	0.0%	2	3	-23.8%	-67.9%	-23.8%	--	--	--	--	-67.7%	Jun-2023
Ara Fund III	0.1%	13	13	0.0%	--	0.0%	--	--	--	--	-24.0%	Oct-2023
Cibus Enterprise II	0.0%	4	4	-3.2%	-4.9%	-3.2%	-5.0%	--	--	--	-7.5%	Jun-2022
Cibus Fund II	0.2%	28	28	2.6%	-2.3%	2.6%	-4.7%	--	--	--	-10.2%	Jun-2022
Co-Investments - Natural Resources	0.2%	26	25	2.7%	5.6%	2.7%	5.6%	--	--	--	3.7%	Oct-2022
Credit Suisse Commodity	2.4%	293	286	2.4%	2.3%	2.4%	-0.7%	9.5%	7.1%	-1.1%	-2.3%	Mar-2011
DWS Natural Resources	4.0%	496	452	5.0%	11.2%	5.0%	6.9%	9.1%	--	--	10.7%	Jun-2019
HiTecVision New Energy	1.0%	120	107	1.7%	12.0%	1.7%	20.0%	--	--	--	28.7%	Sep-2022
Neuberger Berman/Gresham	2.9%	352	339	3.8%	4.2%	3.8%	2.2%	9.9%	6.5%	-0.8%	-0.8%	Jul-2007
Orion Mine Finance Fund III	1.0%	127	145	0.0%	5.9%	0.0%	21.5%	--	--	--	11.5%	Sep-2021
Orion Mine Finance Fund IV	0.1%	16	0	--	--	--	--	--	--	--	0.0%	Mar-2024
Orion Mining Royalty Fund I	0.3%	36	37	0.0%	5.5%	0.0%	2.6%	--	--	--	0.4%	Sep-2021
Private Equity - Real Assets	0.7%	80	80	0.7%	-0.4%	0.7%	-0.8%	7.5%	-5.0%	--	-6.4%	Jan-2019
Sprott	0.5%	58	51	2.6%	9.0%	2.6%	7.2%	--	--	--	6.6%	Mar-2023
TIAA-CREF Global Agriculture I	2.6%	321	294	9.9%	11.1%	9.9%	18.2%	--	--	--	17.9%	Dec-2021
TIAA-CREF Global Agriculture II	2.8%	346	307	12.5%	13.7%	12.5%	14.9%	--	--	--	15.0%	Dec-2021
<b>Infrastructure</b>	<b>34.7%</b>	<b>4,263</b>	<b>4,111</b>	<b>2.2%</b>	<b>6.1%</b>	<b>2.2%</b>	<b>6.8%</b>	<b>6.3%</b>	<b>--</b>	<b>--</b>	<b>7.2%</b>	<b>Jun-2019</b>
DJ Brookfield Global Infra Comp				0.6%	4.1%	0.6%	3.7%	4.8%	--	--	4.0%	
Antin Mid Cap	0.4%	53	54	-0.7%	1.0%	-0.7%	1.4%	--	--	--	-2.1%	Dec-2021
Axiom Infrastructure	2.3%	277	273	2.6%	7.0%	2.6%	9.1%	--	--	--	5.8%	Dec-2021
Axiom Infrastructure Canada	1.2%	152	155	-0.8%	4.3%	-0.8%	7.9%	--	--	--	-100.0%	Nov-2021
Co-Investments - Infrastructure	0.4%	49	42	7.2%	22.5%	7.2%	23.8%	--	--	--	21.7%	Mar-2023
DIF CIF III	0.4%	53	58	-1.3%	8.4%	-1.3%	12.7%	--	--	--	5.0%	Jun-2022
DIF Infrastructure VI	1.1%	138	139	-0.1%	7.3%	-0.1%	9.8%	25.8%	-0.1%	--	15.7%	Mar-2021
DWS Infrastructure	17.5%	2,153	2,130	2.1%	5.8%	2.1%	6.0%	5.3%	--	--	6.7%	Jun-2019
Grain Communications Opportunity III	0.3%	40	38	4.1%	-5.1%	4.1%	-3.0%	-100.0%	--	--	-100.0%	Feb-2021
Grain Spectrum Holdings III	0.6%	75	71	5.4%	5.1%	5.4%	-0.8%	12.9%	--	--	10.9%	Nov-2020
KKR DCIF	4.2%	520	521	0.9%	5.3%	0.9%	6.5%	--	--	--	4.9%	Apr-2022
MGIF	4.4%	537	435	6.6%	--	6.6%	--	--	--	--	12.1%	Aug-2023
Pan-European Infrastructure Fund III	0.6%	76	77	-1.4%	4.9%	-1.4%	7.5%	9.2%	--	--	5.3%	Nov-2020
Partners Grp Direct Infra 2020	1.1%	141	119	3.2%	8.8%	3.2%	13.6%	--	--	--	11.2%	Jan-2022
<b>TIPS</b>	<b>19.0%</b>	<b>2,342</b>	<b>2,140</b>	<b>0.0%</b>	<b>1.8%</b>	<b>0.0%</b>	<b>0.3%</b>	<b>-0.5%</b>	<b>--</b>	<b>--</b>	<b>2.4%</b>	<b>May-2019</b>
Bloomberg U.S. Treasury: U.S. TIPS				-0.1%	1.9%	-0.1%	0.5%	-0.5%	--	--	2.5%	
Blackrock TIPS	19.0%	2,342	2,140	0.0%	1.8%	0.0%	0.3%	-0.5%	--	--	2.4%	May-2019

Data is from State Street as of March 31, 2024.

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# Real Assets & Inflation Hedges: Manager Scorecards



Los Angeles County Employees Retirement Association

## PUBLIC MARKETS MANAGER SCORECARD 1st Quarter 2024

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms	
			1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)	
			SCORE	SCORE	SCORE	SCORE	SCORE	
Manager	Market Value (in \$ millions)	% of Total Fund						
<b>REAL ASSETS &amp; INFLATION HEDGES</b>	<b>NATURAL RESOURCES &amp; COMMODITIES</b>							
	Credit Suisse Commodity	292.7	0.4%	4	S-	1	A	3
	DWS Natural Resources	495.8	0.6%	3	S-	2	A	5
	Neuberger Berman/Gresham	351.9	0.5%	4	S	1	A	5
	<b>INFRASTRUCTURE</b>							
DWS Infrastructure	2,152.8	2.8%	3	S-	2	A	5	
<b>TIPS</b>								
Blackrock TIPS	2,341.6	3.0%	1	S	-	A	5	
<b>PRIVATE REAL ASSETS (ex. Real Estate)</b>	<b>NATURAL RESOURCES &amp; COMMODITIES</b>							
	Appian III	2.0	0.0%	*	S	3	B	3
	Ara III	12.7	0.0%	*	S	4	B	3
	Cibus Enterprise II	3.7	0.0%	*	S	3	B	3
	Cibus Fund II	28.3	0.0%	*	S	3	B	3
	EMG	80.4	0.1%	1	S	3	B	1
	HitecVision New Energy I	119.5	0.2%	*	S	4	A	3
	HitecVision New Energy II	0.0	0.0%	*	S	4	A	3
	Orion Mine Finance III	127.0	0.2%	*	S	4	B	4
	Orion Mine Finance IV	0.0	0.0%	*	S	4	B	3
	Orion Mineral Royalty Fund I	36.4	0.0%	*	S	4	B	4
	Sprott	58.4	0.1%	*	S	3	B	5
	TIAA-CREF Global Agriculture	320.9	0.4%	5	S+	4	A	5
	TIAA-CREF Global Agriculture II	345.9	9.0%	5	S+	4	A	5
	<b>INFRASTRUCTURE</b>							
	Antin Mid Cap	53.2	0.1%	*	S-	3	C	2
	Axiom Infrastructure Canada II	152.0	0.2%	*	S	4	A	3
	Axiom Infrastructure US II	276.7	0.4%	*	S	4	A	3
	DIF CIF III	53.0	0.1%	*	S	3	A	4
	DIF Infrastructure VI	138.4	0.2%	5	S	3	A	2
	Grain Communications Opportunity Fund III	39.8	0.1%	*	S-	3	B	2
	Grain Spectrum Holdings III	74.7	0.1%	3	S-	3	C	2
	Guardian Smart Infrastructure	0.0	0.0%	*	S	3	B	4
	KKR Diversified Core Infrastructure Fund	520.3	0.7%	*	S	3	B	4
	Macquarie Global Infrastructure Fund	536.7	0.7%	*	S-	3	A	4
	Pan-European Infrastructure Fund III	76.7	0.1%	3	S-	3	A	3
	Partners Group Direct Infrastructure 2020	140.7	0.2%	*	S	3	A	3
Partners Group Direct Infrastructure IV	0.0	0.0%	*	S	3	A	4	

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# Real Assets & Inflation Hedges: Manager Scorecards



Los Angeles County Employees Retirement Association

## PRIVATE MARKETS MANAGER SCORECARD 1st Quarter 2024

			Performance	Organization & Operations	ESG	Partnership	Fees & Terms
			1 to 5 (with 5 the best)	S+, S, or S- (with S+ the best)	1 to 5 (with 5 the best)	A, B, or C (with A the best)	1 to 5 (with 5 the best)
			SCORE	SCORE	SCORE	SCORE	SCORE
Manager	Market Value (in \$ millions)	% of Total Fund					
<b>COMMINGLED FUNDS</b>							
AERMONT Real Estate Fund IV	32.0	0.0%	1	S	4	B	3
AEW Value Investors Asia III	52.0	0.1%	1	S	4	B	4
AG Asia Realty Fund IV	76.0	0.1%	4	S	3	B	3
AG Europe Realty Fund II	42.0	0.1%	1	S	3	B	3
Bain Capital Real Estate Fund I	84.0	0.1%	5	S	3	A	3
Bain Capital Real Estate Fund II	58.0	0.1%	*	S	3	A	3
Bain Capital Real Estate Fund III	10.0	0.0%	*	S	3	A	3
Blackstone Real Estate Partners Fund X	14.0	0.0%	*	S	3	B	3
Brookfield Strategic Real Estate Partners Fund IV	185.0	0.2%	*	S	3	B	3
CapMan Nordic Real Estate Fund II	40.0	0.1%	2	S	4	A	3
CapMan Nordic Real Estate Fund III	37.0	0.0%	1	S	4	A	3
CBRE US Core Partners	151.0	0.2%	*	S+	3	A	5
CityView Bay Area Fund II	19.0	0.0%	1	S-	3	B	3
CityView Western Fund I	224.0	0.3%	4	S-	3	B	3
Clarion Lion Properties Fund	94.0	0.1%	*	S	3	A	5
Core Property Index Fund	105.0	0.1%	4	S	2	A	5
Europa Fund IV	11.0	0.0%	1	S-	3	C	2
Heitman Asia-Pacific Property Investors	30.0	0.0%	2	S	3	A	4
Invesco Real Estate Asia Fund	147.0	0.2%	3	S	4	A	4
Prologis European Logistics Fund (PELF)	180.0	0.2%	3	S	4	B	1
RREEF Core Plus Industrial Fund (CPIF)	279.0	0.4%	5	S-	3	B	5
Starwood Capital Hospitality Fund	6.0	0.0%	4	S	3	C	3
TPG Real Estate Partners III	36.0	0.0%	4	S	2	C	3
TPG Real Estate Partners IV	4.0	0.0%	*	S	2	C	3
<b>SEPARATE ACCOUNTS</b>							
Cityview Core I.M.A.	162.8	0.2%	2	S-	3	B	2
Clarion I.M.A.	460.9	0.6%	5	S	3	A	4
Clarion Takeover Core IMA	289.6	0.4%	*	S	3	A	4
Clarion Takeover Value IMA	4.3	0.0%	*	S	3	A	3
Heitman I.M.A.	375.5	0.5%	4	S	3	B	4
RREEF Core/High Return I.M.A. III	1,056.7	1.4%	2	S-	3	C	5
RREEF Takeover I.M.A.	3.0	0.0%	2	S-	3	C	4
Stockbridge I.M.A.	554.2	0.7%	3	S	2	B	4
Stockbridge High I.M.A. Vintage 2014	35.2	0.0%	*	S	2	B	5
Stockbridge Value I.M.A. Vintage 2014	25.5	0.0%	*	S	2	B	3

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# Glossary of Terms



Term	Acronym	Definition
<b>Beta</b>	N/A	A measure of the sensitivity of an asset to movements in the market or other benchmark; thus, a measure of its non-diversifiable or systematic risk. A beta of one 1.0 indicates that, on average, the asset is expected to move in tandem with the market or benchmark.
<b>Distributions to Paid-in Capital</b>	DPI	A ratio of total capital returned to investors to the capital paid-in.
<b>Information Ratio</b>	N/A	The excess return (alpha) per unit of active risk (tracking error).
<b>Internal Rate of Return</b>	IRR	IRR is a measure of performance used to evaluate the attractiveness of an investment. The interest rate at which the net present value of all cash flows is zero.
<b>NCREIF Fund Index - Open End Diversified Core Equity</b>	NFI ODCE	A real estate index of investment returns for open-end commingled funds pursuing a core investment strategy. These funds typically invest in stable U.S. operating properties diversified across regions and property types.
<b>Public Market Equivalent Analysis</b>	PME	Compares private equity fund performance to a hypothetical portfolio of similar investments in a public index. The analysis discounts fund contributions and distributions based on realized public index returns during the same time period, with the ratio representing the sum of the discounted distributions and market value divided by the sum of the discounted contributions. A PME value greater than 1.0 indicates that the investor benefitted from investing in the private equity fund rather than the public index.
<b>Sharpe Ratio</b>	N/A	Measures risk-adjusted performance of an investment compared to a risk-free asset.
<b>Standard Deviation</b>	STD	Volatility of monthly returns that measures the average deviation from the mean.
<b>Total Value to Paid-In Capital</b>	TVPI	The ratio of the current value of remaining investments within a fund, plus the total value of all distributions to date, relative to the total amount of capital paid into the fund to date
<b>Tracking Error</b>		The volatility of a manager's excess return. It is measured by subtracting the benchmark return from the manager's return and calculating the standard deviation.
<b>Yield to Worst</b>	YTW	Yield of a bond adjusted for any embedded options. Equals the lowest yield, among all possible redemption dates, for a given bond.